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6 March 67

MEMORANDUM FOR THE RECORD

SUBJECT : Life Support Facility at

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1. In planning for the proper ground support and test equipment for the new U-2R pilots protective assemblies the assumption was made, based on information provided by that a new building housing the Life Support Section (i.e., the Instrument Lab) was to be constructed. The apparent change in plans regarding construction of this facility necessitates a review of the life support section requirements as follows.

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2. The present Life Support Section facilities are inadequate in the following respects:

a. Space Considerations: During the period that both the present PPA's for the U-2C and the new PPA's for the U-2R must be supported the shortage of space will be most acute. The required test and support equipment for the two systems is not common, therefore, additional space is required for this function. Seat kits and parachutes also are not common to both aircraft, hence storage space requirements will increase. Space in the life support section will be necessary for test and calibration equipment required for the aircraft LOX system, which is a requirement that presently does not exist. The requirement for more working space will not be reduced even when (and if) the U-2C is phased out and replaced by U-2R's entirely. The assignment of two additional technical representatives requiring adequate work space equipped with proper test equipment and an expected increase in the number of Life Support personnel assigned represents a continuing requirement for additional space. Finally, the storage space required for full pressure suits is approximately twice that required for the present partial pressure suit.

b. Environmental and Physical Factors: The U-2R PPA's are much more expensive, sophisticated, and complex than the presently used equipment and require more optimum

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environmental conditions than presently exist in the life support section. Primarily, the dust and sand that cannot be kept out of the building is a source of concern. To prevent undue wear and tear on the PPA's and test equipment an adequate facility should provide strict temperature and humidity controls and positive pressure ventilation. The electrical power requirements for test equipment will further burden the present supply, which, according to [] is near maximum capacity now.

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3. Solutions: In view of the above considerations, the following alternative solutions are reviewed:

a. Permanent New Facility: If the instrument lab building will eventually be constructed, it may be possible to have the life support section of this building constructed on a separate, expedited basis with later construction to complete the entire building. This solution would satisfy all the problems referred to in paragraph two above.

b. Permanent New Addition to Present Facility: If the instrument lab building will not eventually be constructed, a permanent addition to the present building could be constructed to solve the problems outlined. The end result would be a facility that would satisfy the requirement for supporting both new and old PPA's but would be a less efficient solution than that proposed in paragraph three a above.

c. Temporary Additions to Present Facility: A temporary solution to the space limitations could possibly be provided through the use of trailers and/or vans. However, these may or may not solve the problems of environmental control depending on the types of vans/trailers available. The most satisfactory vans would be similar to the maintenance/altitude chamber vans presently used []. The least satisfactory solution would be rental trailers because it is unlikely that adequate oxygen, vacuum and other provisions for test equipment could be provided.

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4. Conclusions: An expanded and improved life support facility is required at [] primarily because the U-2R life support equipment demands improved environmental conditions,

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more storage and work space, and an increase in support personnel assigned. Of the alternatives listed in paragraph three above, the most satisfactory, in terms of adequate and efficient operation, is the construction of a new, permanent facility.



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